



# **EU Energy Policy and Smart Specialisation**

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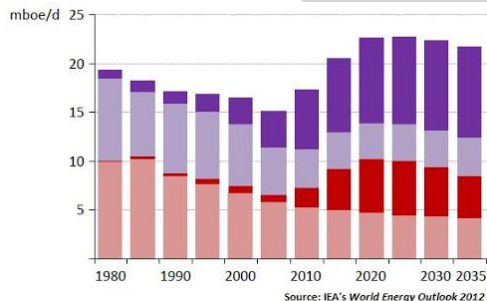
# Climate and energy: where do we stand?

- **Developments since the 2009 Energy and Climate change package**

**Renewable energy saw rapid cost decreases**  
Technologies are gradually becoming competitive  
But large scale integration is a challenge

**Impact of the financial crisis**  
Fall in private investment, tight financing conditions

**Shale gas**  
US oil and gas production



Unconventional gas  
Unconventional oil  
Conventional gas  
Conventional oil

**Ukraine**  
**COP21 -Paris**

**Rising demand -> rising prices**  
By 2030, world economy set to double and energy demand to rise by 1/3

**Fukushima**

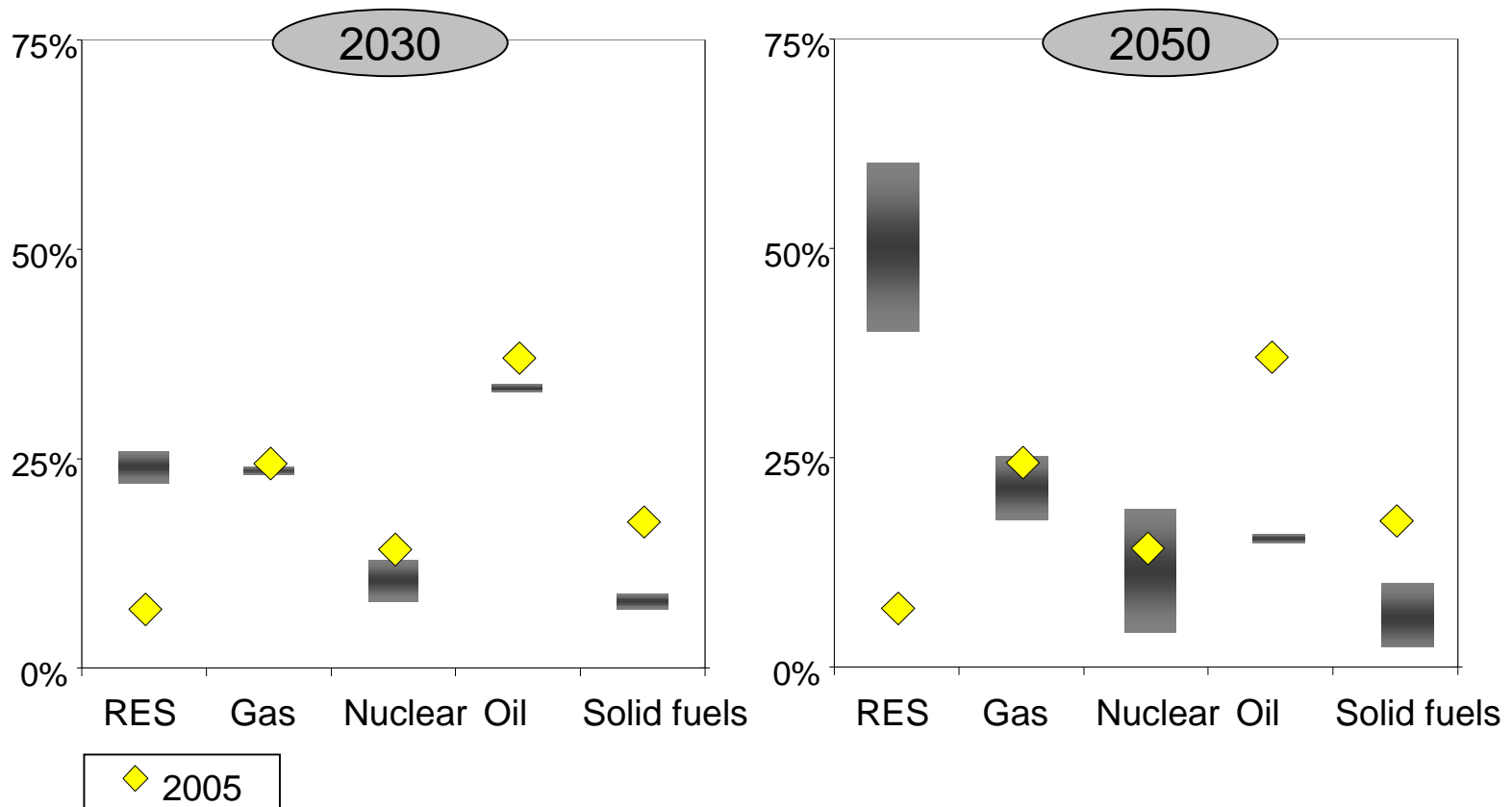


Some countries phase out nuclear power production

# Looking to the future – Energy Roadmap 2050

- Basis: 20/20/20 objectives of the EU energy policy
- Roadmap 2050: Cutting GHG emissions until 2050 down to 80 – 95 % below the level of 1990
- The Energy Roadmap 2050: the basis for the elaboration of a low carbon 2050 strategy
  - *Supported by multiple **scenario** analyses, to show how to reach the 80 % / 95 % goal while at the same meeting other policy objectives (Competitiveness and Security of Supply)*
  - *Containing robust assumptions for all possible scenarios*

# Fuel Ranges (primary energy consumption)



# Major energy challenges in Europe

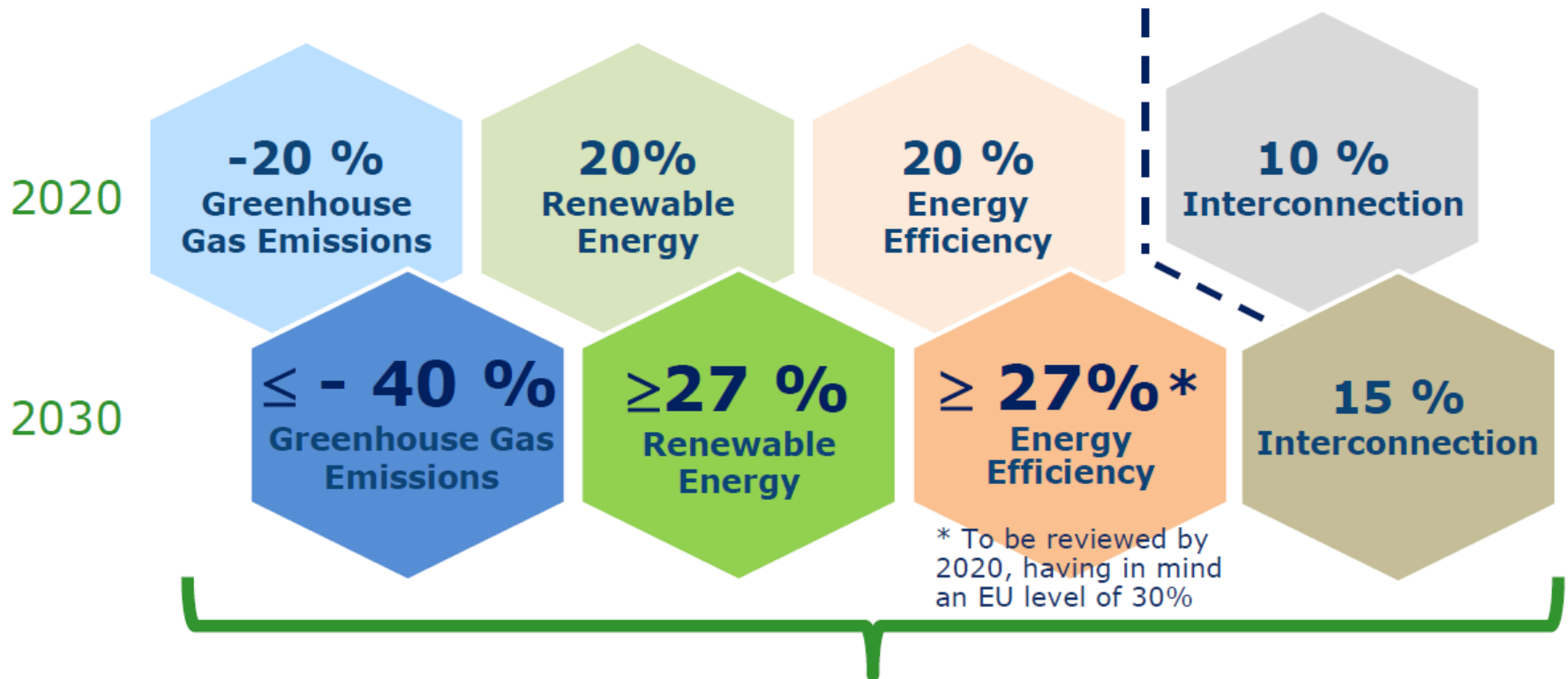
- Import Dependency
- Energy Prices
- Decarbonisation
- Technology mix

**EE and RE at the core of the solutions for 2020 -2050**



European  
Commission

# 2030 framework for climate and energy policies



**New governance system + indicators**

## **Challenges in meeting 2020 targets Reflected in the 2030 framework**

**More competitive global environment**

**Massive investment needs in difficult  
economic context**

**Cost-effective RES and grid stability**

**ETS to provide investment signals**

**Concerns about energy prices and energy  
security**

# The Energy Union

The Energy Union aims to address the three objectives of **competitiveness, security of supply** and **sustainability**.  
*•through a strong commitment by the EU institutions and the Member States to deepen integration, cooperation and coordination of both the external and internal aspects of energy policy.*

The Energy Union should be based on five mutually reinforcing dimensions:

1. Supply security, based on solidarity and trust
2. A competitive and completed internal energy market
3. Moderation of energy demand
4. Decarbonisation of the EU energy mix
5. Research and innovation



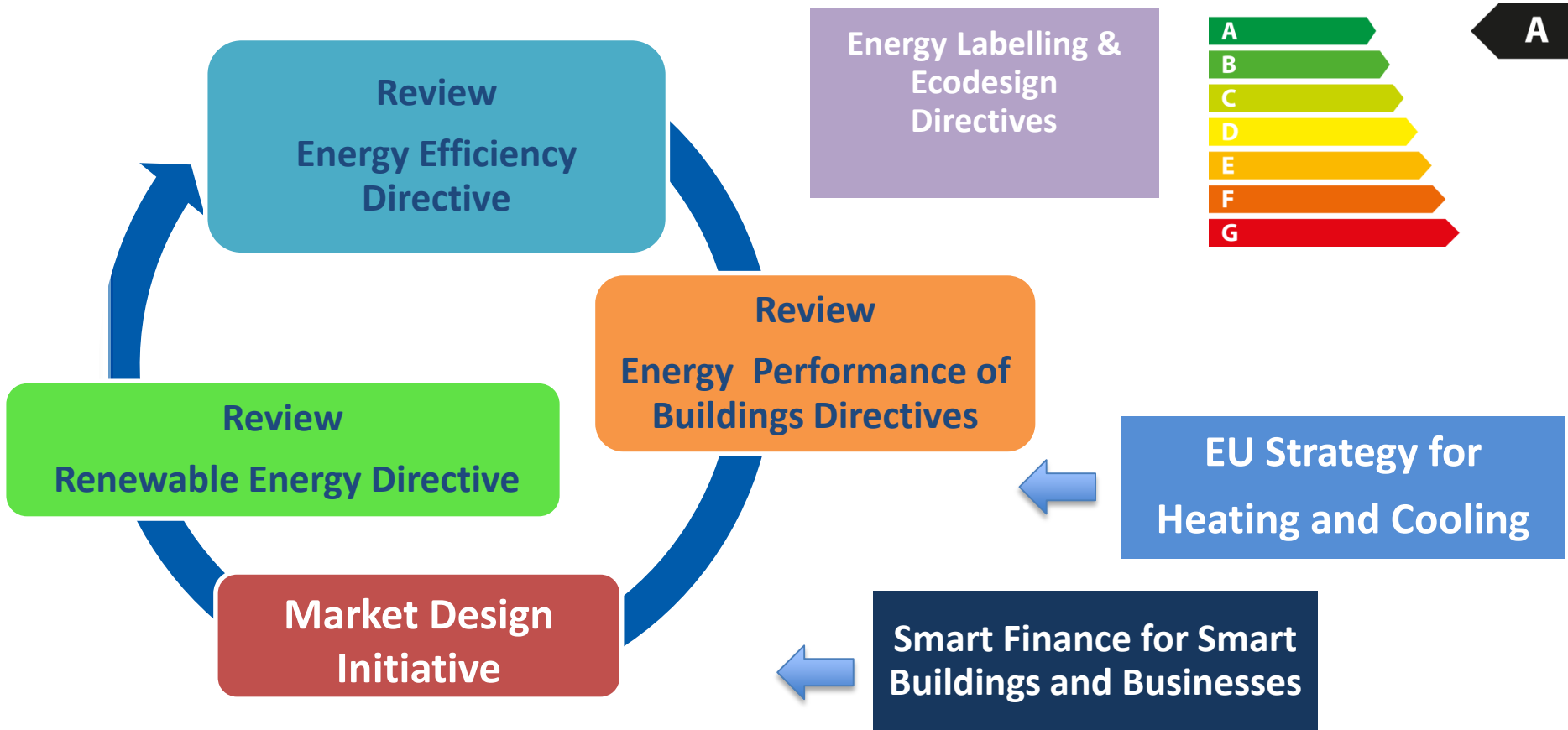


# Relevant Key Activities

- **Strengthen European regulatory framework**
- **Sustainable energy security package, 2016**
  - **LNG and Storage**
  - **A decision on Intergovernmental Agreements in energy**
  - **Security of Gas Supply Regulation**
  - **Heating and Cooling strategy**
- **A new market design, 2016**
- **Renewables package 2016-2017**
  - **Self-consumption**
  - **Bioenergy sustainability**
  - **post 2020 RES legal framework**
- **Alternative fuels & integration of energy and transport sectors**
- **Initiative on global technology and innovation leadership on energy and climate**

# legislation review & revision in 2016

Rational : meet COP21 commitments and pave the way towards 2050



# Electricity Market Design

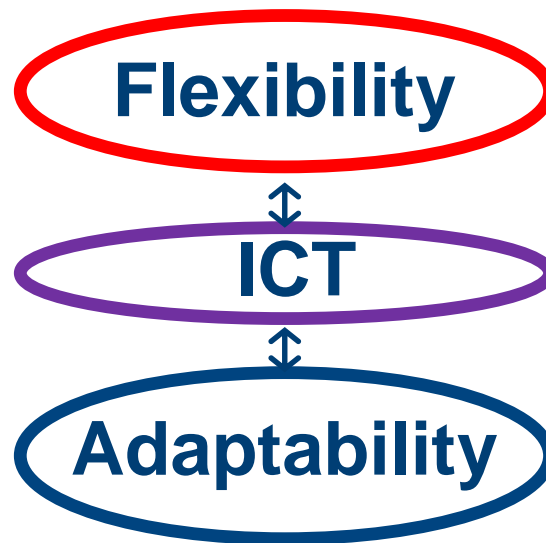
The electricity market framework will be revised to better integrate renewables into the electricity system. This will include market arrangements:

- suitable for an interconnected EU-wide electricity market providing clear **price signals** for new investments and facilitating the further development of renewables;
- to promote **regional cooperation** and coordination on energy policies;
- to enable cooperation on **development of renewables**, including on support schemes;
- to provide a truly European dimension to **security of electricity supply**.

# A flexible and adaptive energy system

## Smart Energy System

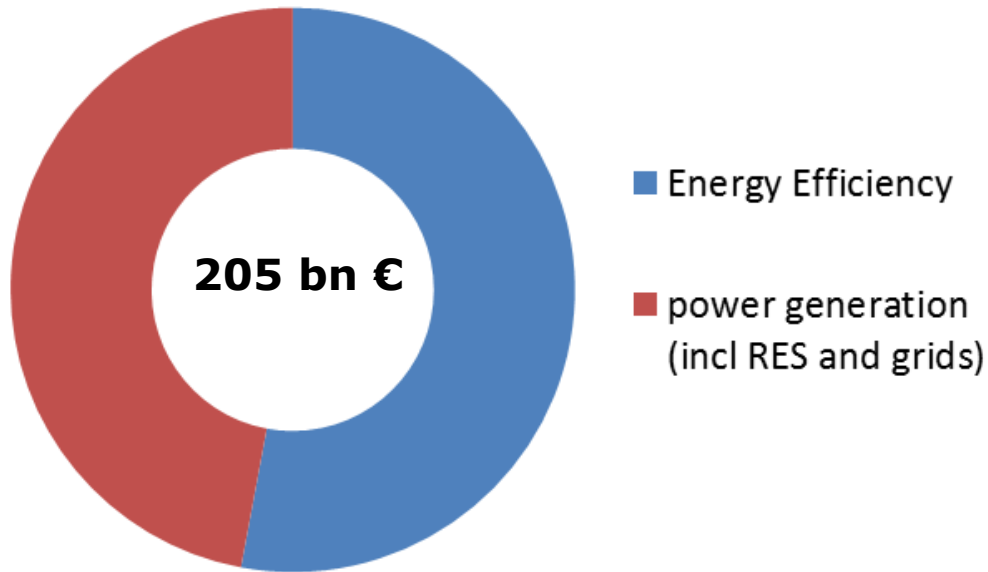
- Generation
- Demand
- Electricity, gas and heat networks
- Storage



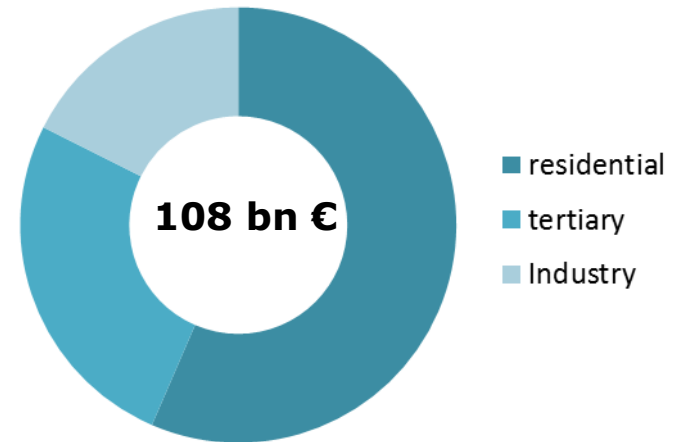
**Power generation**  
**Grid**  
**Storage**  
Demand management  
Transport; BEV, etc.  
Prosumers  
Markets  
Fuel switching  
Avoid lock-in  
Adaptation of the gas grid

# Investment needs in the energy system

## Annual investments until 2030



## Annual EE investments until 2030



# Smart Specialisation

## 'Smart Specialisation' strategies develops and builds on national or regional innovation strategies

- setting priorities in order to **build competitive advantage** by developing and matching research and innovation strengths with business needs to address emerging opportunities and market developments in a coherent manner
- Aims at **avoiding duplication and fragmentation** of efforts, and which may take the form of or are included in a national or a regional research and innovation (R&I) strategic policy framework.

**The "Smart Specialisation Platform on Energy (S3P-Energy)" is expected to deliver tangible results/projects, mobilising the stakeholder over value chains.**

- An initiative set up by DG's REGIO, ENER and JRC.

**Thank You for Your Attention!**

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**[http://ec.europa.eu/energy/index\\_en.htm](http://ec.europa.eu/energy/index_en.htm)**

